

Amendments to the Specification:

Please replace paragraph number 2, page 4, lines 9-15 with the following amended paragraph:

Based on the methods described above, two-dimensional electrophoresis has been performed so far for only not a few proteomes. Analytical results obtained by amino acid sequencing and peptide mass fingerprinting method performed on isolated protein spots have been recoded together with coordinate information, and stored in databases such as SWISS-2DPAGE (<http://expasy.hcuge.ch/ch2d/>), etc.

Please replace paragraph number 2, page 5, line 18 through page 6, line 3 with the following amended paragraph.

A method not necessarily requiring gel, capillary electrophoresis (hereafter abbreviated as CE), has been known in the art. Since CE is performed in narrow spaces (capillary channels) having an inside diameter of about 100 µm, effects of convection due to the generation of Joule heat in conjunction with electrophoresis can be neglected. Therefore, CE may be performed in liquid instead of gel. However, as CE has to be carried out in capillaries having an inside diameter ranging from only several tens to one hundred micrometers, it cannot be applied to two-dimensional electrophoresis requiring widths ranging from several to several tens of centimeters. On the contrary, it is characteristic of CE that it enables to ~~is characteristic of substances which can be easily collected substances~~ from parts of capillary to which they have been electrophoresed. On the other hand, in slab gels, isolation of substances from spots separated as a result of, for example, electrophoresis, requires additional procedures such as electric separation from desired spots or mechanical excision of gels. These procedures are not only complicated but also have left room for improvement of reproducibility as a top priority.

Please replace paragraph number 1, page 8, lines 1-31 with the following amended paragraph.

Important conditions to compose the present invention are that the second dimensional separation media are composed of a plurality of separation media which are independent of each other. Owing to this characteristic, homogeneity of second dimensional separation media which requires a certain width can be improved. Therefore It is because, regardless of whether the medium is gel or other material, the narrower the width the higher the homogeneity can be maintained in the medium. Even in a limited range, ability to secure highly homogeneous conditions leads to more accurate discrimination of separated spots. Needless to say, due to the independence of separation media, each spot obtained as a result of second dimensional separation is always in a state clearly separated at least from the first dimensional direction. This feature in this invention enables the coordinate information on separated spots to be caught as digital data. In other words, since, in this invention, coordinate information is identified by a number of autonomous medium at least in the first dimension, this arrangement may be referred to as a sort of digitalization. Therefore, in this invention, accurate separation of spots can be expected in the first dimensional direction. On the other hand, in the second dimensional developing direction, discrimination of spots can also be accurately performed based on homogeneity of the separation medium. At the mechanical reading of coordinate data, determination of coordinates becomes possible without image correction which requires high grade image processing technique. Thus, performance of spot discrimination is improved, resulting in the improvement in separation reproducibility. This invention enables the easy performance of electrophoretic image analysis based on digitalization in the first dimensional direction and spot separating capability in the second dimensional direction.